

Original Research Article

Community Participation in Malaria Control and Prevention in Abia State, Nigeria

Abstract

Community engagement and participation has played a critical role in successful disease control and elimination campaigns in many countries. Although malaria is endemic in many parts of the country, the knowledge, attitude and practice of the community about the disease prevention and control options is far from perfect, and misconceptions and malpractices are common. The study conducted between January and April, 2016 was aimed at evaluating the level of knowledge, attitude and practices of the community towards malaria prevention and control. A cross-sectional approach was adopted through collecting data using pre-tested structural questionnaire. The information which included such variables like knowledge, attitude and practice of malaria control and preventive measures were adopted. A total of 2000 fully completed questionnaires were retrieved consisting of 947 (47.5%) males and 1050 (52.6%) females. Majority of the respondents (94.8%) were literate with 64.9% married. The results further revealed a total of 1967(98.4%) who claimed they have a good knowledge of malaria as a disease. However, only 1657(82.9%) knew infected mosquito bite as the cause of malaria; although, some had misconceptions on the causes of malaria. Almost all the respondents correctly associated malaria with clinical symptoms of the disease. Majority of the respondents have good knowledge of environmental factors predisposing to malaria with 887(44.4%) for stagnant pool of water, bushes around the house was 764(38.2%) while refuse was 185(9.3%). However, 87(4.4%) had a misconception that cold weather is one of the factors that predisposes to malaria. On the preventive measures used, ITNs had the highest percentage with 29.7%. Despite increased access to this intervention over time, the use of ITNs still remains low. All respondents claimed involvement in the monthly sanitation program. However, only a little percentage (1.3%) performs this exercise weekly. Although community knowledge of malaria is high, prevention and control options are still very low. Therefore, the existing efforts must be strengthened and health education programs intensified to improve the community attitude and practice towards malaria prevention and control.

Key words: Community participation, malaria prevention and control, Abia State

Introduction

Nigeria is one of the hardest hit of the countries in malaria-endemic countries of sub-Saharan Africa. Malaria remains a major public health problem and its control poses a great challenge in Nigeria. One key factor in combating the burden of malaria is decreasing exposure to the disease, both by reducing vector populations and by lowering contact between humans and infected mosquitoes. Additionally, increasing people's use of healthcare facilities and anti-malarial drugs

are important in decreasing malaria morbidity and mortality. People's knowledge and perception of malaria influence both prevention and treatment-seeking behaviors [1]. A study in Zimbabwe concluded that there is a significant relationship between people's knowledge of the causes of malaria and their preventive measures [2]. Local knowledge and perceptions of malaria are likely to influence the success of environmental management programs as well. If people have a comprehensive understanding of mosquito life cycle and habitat requirements, it is likely that they will be more effective in controlling the habitats to reduce mosquito population. The first step in the introduction of an environmental management campaign is to ensure that communities understand the processes of vector ecology, how the processes are linked to their surrounding micro-environment, and how performing management techniques will impact malaria in their community. If properly implemented, environmental management is a promising approach. It is a method that requires a community to take ownership, maintain through participation and cooperation, and sustain through continual education of community members [3].

In order for environmental management techniques to succeed in reducing the malaria burden, widespread community participation is essential. A threshold amount of stagnant water must be drained in order for mosquito populations to be significantly reduced in a community. This highlights the importance of viewing environmental-based malaria control as a collective action problem. In this situation, if majority of people in a community contribute a small amount of time to performing environmental management, the entire community will benefit from reduced malaria incidence. Collective action is important for other forms of malaria control as well, particularly those that focus on reducing vector populations. In Burkina Faso, the collective use of insecticide-treated nets reduced malaria incidence by 90% for all community members, even those not sleeping under the nets [4]. The high net usage was sufficient to decrease the number of malaria-infected mosquitoes enough so that malaria rates in the entire area were reduced. It is only with extensive participation from the community members that a significant reduction in mosquitoes, and thus malaria burden will occur.

Education programs have been used in many situations to increase community understanding and participation in malaria control activities. In India, one program used folk theaters to teach people about malaria control and prevention [5]. This activity led to a significant increase in knowledge and participation in bio-environmental malaria control activities. In Sri Lanka, participatory exercises were conducted in the field to identify mosquito breeding sites [6]. An integrated vector management program in Kenya taught community volunteers how to identify larval mosquitoes using live specimens [7]. Additionally, the farmer field school is an important example of a successful integrated vector management education program targeting agricultural areas [8]. The field school curriculum includes participatory exercises to identify breeding habitats, sample and identify adult mosquitoes, observe larval mosquitoes, learn techniques for source reduction and suppression of mosquito breeding, and map the village to identify areas to focus coordinated environmental management efforts. All of the above programs were all

successful in increasing community knowledge and participation in effective malaria control techniques.

Roll back malaria (RBM) is a people-oriented program that emphasized community participation. The RBM strategy seeks to establish a social movement in which local communities, public and private sectors, all tiers of government and non-governmental agencies come together in a partnership and network to implement malaria control activities[9]. Participatory monitoring methods are one way for partners and participants to evaluate their own performance and see how this is affecting malaria incidence and death rates. Hence, it is important to keep community volunteers or support groups involved and this will make prevention and treatment practices sustainable. When sustainability is achieved, gains in malaria control and continued progress towards Roll Back Malaria (RBM) and Millennium Development Goals will be achieved. Thus community empowerment in all program phases and community participation will in no doubt yield desirable results in malaria control. Community participation in planning, implementation and monitoring will improve the control strategies. This study is aimed at evaluating community participation in malaria prevention and control in Abia State Nigeria. The data obtained will help in strengthening community involvement in malaria eradication.

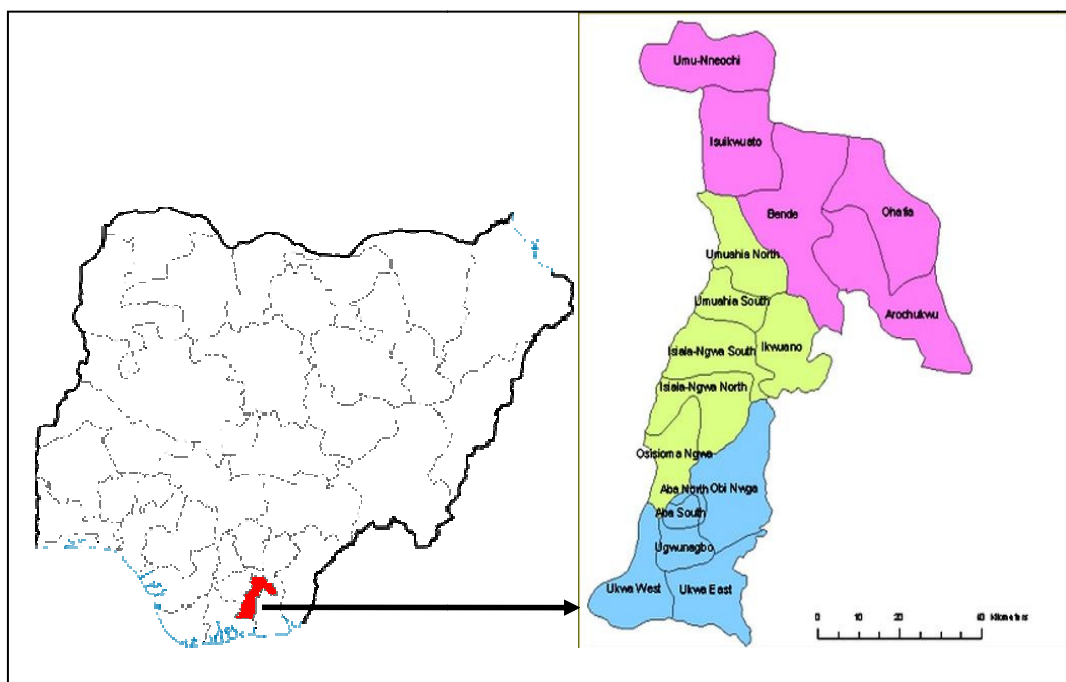
Materials and Methods

Study Area: Abia state is located in the south eastern part of Nigeria. The State lies between latitude $4^{\circ} 45^1$ and $6^{\circ} 15^1$ North and longitude $6^{\circ} 30^1$ and $8^{\circ} 9^1$ East. The people of the state are very dynamic and are predominantly farmers, artisans and civil servants. Other ethnic groups also reside with the dominant Igbo speaking people. The State is prone to malaria because of its flooding nature during the rainy seasons with poor drainage system, resulting in the formation of temporary water bodies that promote the breeding of mosquitoes, the vector for malaria parasites.

Research Ethics: Ethical review and consent procedures were obtained from the Ethical Review Committee of the Department of Biology/Microbiology, Abia State Polytechnic, Aba. Permission was sought from the community leaders in each of the sampled communities and right of individuals to participate or not was emphasized. Individuals who consented signed the consent forms.

Study Design and Data Collection: The study conducted between January and April, 2016, was designed to evaluate the knowledge, attitude and practice of community members to malaria control and prevention. A cross-sectional approach was adopted through collecting data using pre-tested structural questionnaire from community members. The information which included such variables like knowledge, attitude and practice of malaria prevention and control was presented in English language or interpreted in the local dialect for better understanding to the

113 respondents. Two thousand six hundred questionnaires were administered two thousand fully
 114 completed and returned. Given the magnitude and sensitive nature of the work and the need to
 115 generate adequate data, field assistants were used and trained on the importance of making
 116 relevant field observations, data collection and keeping accurate records. To realize the above,
 117 they were reminded of the importance of their role in the whole research objectives and the
 118 procedure of achieving the goals.



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 121 Map of Abia State, Nigeria

122 Source: https://commons.wikimedia.org/wiki/File:Abia_Abia_State_Nigeria

123 Results

124 The socio-demographic characteristics of the respondents are shown in Table 1. A total of 2000
 125 fully completed questionnaires were retrieved consisting of 947 (47.5%) males and 1050 (52.6%)
 126 females. Based on age, 30-39 years were 25.1%. This was closely followed by age group 10-19
 127 and 20-29 years with 19.6% and 19.4% respectively. On the educational status, majority (94.8%)
 128 had at least primary education. On occupational status, farmers were more predominant (26.9%)
 129 and closely followed by students with 26.3% and then the traders (22.1%); the married were
 130 more (64.9%) than the singles (35.1%).

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134 Table 1: Socio- Demographic Characteristics of the Respondents

Variables	Number Sampled	Percentage sampled (%)
Age Sex		
10-19Male	949	47.5
Female	1050	52.6
Age (years)		
10-19	392	19.6
20-29	388	19.4
30-39	501	25.1
40-49	343	17.2
≥ 50	376	18.8
Educational Status		
Primary	508	25.4
Secondary	815	40.8
Tertiary	572	28.6
None	105	5.3
Occupation		
Trading	441	22.1
Farming	538	26.9
Artisan	134	6.7
Student	525	26.3
Civil servant	362	18.1
Marital Status		
Single	702	35.1
Married	1298	64.9

135

136 Table 2 shows the community Knowledge, attitude and perception of malaria. A total of 1967
137 (98.4%) claimed they had good knowledge of malaria as a disease. However, 1657(82.9%) knew
138 mosquito bite as the cause of malaria. On the symptoms of malaria 38.7% claimed they usually
139 have fever while 16.7% and 16.2% respectively claimed headache/body ache and chills/rigors as
140 their own symptoms of malaria. On the frequency of attacks, 782(39.1%) claimed they usually
141 have malaria every 3 months; 444(22.2%) claimed monthly while 62(3.1%) claimed yearly. On
142 community knowledge of Environmental factors predisposing to malaria, stagnant pool of water
143 was 887(44.4%), bush was 764(38.2%) while cold weather was 87(4.4%).

144 Table 2: Community Knowledge, Attitude and Perception of Malaria

Variable	Number of respondents	Percentage of respondents (%)
Community knowledge of malaria as a disease		
Yes	1967	98.4
No	33	1.65
Community knowledge of the causes of malaria		
Bite from infected mosquito	1657	82.9
Poor environmental hygiene	194	9.7
Cold weather	84	4.2
Poor personal hygiene	26	1.3
	39	2.0
Community knowledge of the Symptoms (multiple answers allowed)		
Chills and rigor	323	16.2
Headache/body ache	333	16.7
fever	774	38.7
vomiting	285	14.3
Loss of appetite	148	7.4
Bitter taste	165	8.3
Joint pains	113	5.7
cough	114	5.7
weakness	145	7.3
Frequency of Malaria Attack		
weekly	105	5.3
monthly	444	22.2
Every 3 months	782	39.1
Every 6 months	607	30.4
Yearly	62	3.1
Community knowledge of Environmental factors predisposing to malaria (multiple answers allowed)		
Stagnant pools of water	887	44.4
refuse	185	9.3
bush	764	38.2
Cold weather	87	4.4

145 Table 3 shows the malaria prevention and control measures used by community members. Out of
 146 2000 respondents interviewed, 593(29.7%) claimed they use ITNs, 545(27.3%) claimed they use
 147 door/window netting, 312(15.6%) claimed they use insecticides while 87(4.4%) claimed they

have no protective measures. All the respondents claimed involvement in the monthly environmental sanitation programs. However, only 142(7.1%) and 25(1.3%) claimed they carry out this sanitation exercise twice a month and weekly respectively. On specific tasks handled in the sanitation program, 1204(60.2) claimed involvement in bush clearing, 1091(54.6%) claimed involvement in drainage of gutters while 588(29.4%) claimed involvement in clearing refuse dumps.

Table 3: Malaria prevention and Control Measures

Community Home Management Methods (HMM) used to prevent malaria		
Use of ITN	593	29.7
Use of insecticides	312	15.6
Use of mosquito coil	60	3.0
Use of door/window netting	545	27.3
Use of antimalarial drugs	243	12.2
Use of repellent cream	14	0.7
Wearing long sleeves	112	5.6
Burning of local plants	34	1.7
None	87	4.4
Community Participation on environmental sanitation		
Yes	2000	100
No	-	-
Frequency of Environmental sanitation		
Once a month	1833	91.7
Twice a month	142	7.1
Every week	25	1.3
Specific Tasks on Community Environment sanitation program (multiple answers allowed)		
Clearing of bush around the surrounding	1204	60.2
Clearing of refuse dumps	588	29.4
Drainage of gutters	1091	54.6

Discussion

The present study evaluates the effects of community participation in malaria control and prevention in Abia State, Nigeria. The study revealed that majority of the sampled population (98.4%) claimed knowing malaria as a disease. However, 82.9% claimed having knowledge of infected mosquito bite as the cause of malaria. This result corroborates with the findings of some authors like Ayelew [10], Bamidele et al [11] and Ezeigbo et al [12] were majority of the

respondents claimed knowing infected mosquito bites as the cause of malaria. Majority of the respondents have good knowledge of the symptoms, with fever being the most frequent symptom (38.7%). On the environmental factors predisposing to malaria, stagnant pools of water (44.4%) and bush around the surrounding (38.2%) were more frequent. Thus having a good knowledge of these factors is a determinant to the success or failure of malaria control programs. The people's perception and understanding of malaria will determine the extent to which they can prevent and/or treat malaria, and their acceptance and usage of malaria control interventions. Thus, malaria prevention must go hand in hand with community participation.

On home management methods used to prevent malaria, ITNs was more prominent (29.7%), closely followed by door/window netting (27.3%). However, a small percentage (4.4%) still claimed they do not use any preventive measures (4.4 %). A similar study by Chilaka [13] in 5 African countries in a Roll Back Malaria Initiative program, found the practical reality of community engagement in malaria control to be still generally low. Thus, despite the efforts of the Roll Back malaria initiatives on the use of ITNs, only 29.7% of the population claimed usage. The use of the preventive measures is definitely affected by community's definition of their priorities regarding health and the illness and the degree to which individuals think they can personally control or prevent the illness. No matter how sound a preventive approach might be, if individuals do not see the merits of a particular approach or if competing needs are prioritized higher, the preventive approaches will fail to some degree.

All the respondents claimed they participate in the monthly sanitation exercise. Surprisingly, only 1.3% claimed carrying out the exercise every week. The specific tasks handled by the sampled communities centered on clearing the bush around the surrounding (60.2%), draining the gutters (54.6%) and clearing the refuse (29.6%). It is therefore recommended that community members should be encouraged to carry out the sanitation of their environment more frequently than the monthly approved sanitation exercise.

Conclusion

Roll back malaria (RBM) emphasized community participation in the control of malaria. Hence, it is important to keep community volunteers or support groups involved in malaria prevention. This will make the prevention and treatment practices sustainable. When sustainability is achieved, gains in malaria control and continued progress towards Roll Back Malaria (RBM) and Millennium Development Goals will be achieved. Thus community empowerment in all program phases and community participation will in no doubt yield desirable results in malaria control. Unless individuals in the community see the merits of preventing the illness, even the best-designed prevention strategies might not be used. Community participation in planning, implementation and monitoring will improve the control strategies.

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